

I. In the Claims (Clean Sheet)

23. A nucleic acid sequence encoding a 15 kD *Babesia canis* associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:2.
24. The nucleic acid sequence of Claim 23 having at least 90% homology with the amino acid sequence as depicted in SEQ ID NO:2.
25. The nucleic acid sequence of Claim 23 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:2.
26. A cDNA comprising a nucleic acid sequence according to Claim 23.
27. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
28. A recombinant DNA molecule comprising a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
29. A live recombinant vaccine comprising a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

31. A host cell comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23; a cDNA fragment comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

32. A *Babesia canis* associated protein, said protein having a molecular weight of 15 kD and comprising an amino acid sequence that is at least 80% homologous to the amino acid sequence as depicted in SEQ. ID. NO. 1, or an immunogenic fragment of said protein.

33. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 85% homologous to the amino acid sequence as depicted in SEQ. ID. NO. 1, or an immunogenic fragment of said protein.

34. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 90% homologous to the amino acid sequence as depicted in SEQ ID NO: 1, or an immunogenic fragment of said protein.
35. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 95% homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
36. A vaccine for combating *Babesia canis* infections, comprising an immunogen selected from the group consisting of a nucleic acid sequence according to Claim 23; a cDNA comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 23 and a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; and, a host cell comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23, a cDNA fragment comprising a nucleic acid sequence according to Claim 23, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter, and a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 23 and a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

37. The vaccine of claim 36 further comprising an adjuvant.
38. The vaccine of claim 36 further comprising an additional antigen derived from a virus or microorganism pathogenic to dogs or a nucleic acid sequence encoding said antigen.
39. The vaccine according to claim 33, wherein said virus or micro-organism pathogenic to dogs is selected from the group of *Ehrlichia canis*, *Babesia gibsoni*, *vogeli*, *rossi*, *Leishmania donovani*-complex, Canine parvovirus, Canine distempervirus, *Leptospira interrogans* serovar *canicola*, *icterohaemorrhagiae*, *pomona*, *grippotyphosa*, *bratislava*, Canine hepatitisvirus, Canine parainfluenzavirus, rabies virus, *Hepatozoon canis* and *Serpinin burgdorferi*.
40. A vaccine for combating *Babesia canis* infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of claims

41. A diagnostic test for the detection of *Babesia canis* associated RNA wherein the test comprises a nucleic acid sequence according to Claim 23, a nucleotide sequence that is complementary to said nucleic acid sequence, and a fragment thereof having a length of at least 12 nucleotides.
42. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 32-35.
43. A diagnostic test for the detection of *Babesia canis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 32-35.
44. A nucleic acid sequence encoding a 32 kD *Babesia canis* associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:4.
45. The nucleic acid sequence of Claim 44 having at least 90% homology with the amino acid sequence as depicted in SEQ ID NO:4.
46. The nucleic acid sequence of Claim 44 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:4.

47. A cDNA comprising a nucleic acid sequence according to Claim 44.

48. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

49. A recombinant DNA molecule comprising a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

50. A live recombinant carrier comprising a cDNA comprising a nucleic acid sequence according to Claim 44.

51. A live recombinant carrier comprising a recombinant DNA molecule selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

52. A host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44; a cDNA fragment comprising a nucleic acid sequence according to Claim 44; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter; and, a

acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

53. A *Babesia canis* associated protein, said protein having a molecular weight of 52 kD and comprising an amino acid sequence that is at least 30% homologous to the amino acid sequence as depicted in SEQ ID NO:4 or an immunogenic fragment of said protein.

54. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 45% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.

55. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 60% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.

56. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 85% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.

57. A vaccine for combating *Babesia canis* infections, comprising an immunogen selected from the group consisting of a nucleic acid sequence according to Claim 44; a cDNA

sequence according to Claim 44 and a cDNA comprising a

nucleic acid according to Claim 44, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 44 and a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter; and, a host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44, a cDNA fragment comprising a nucleic acid sequence according to Claim 44, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

48. The vaccine of claim 47 further comprising an adjuvant.

49. The vaccine of claim 47 further comprising an

adjuvant.

60. The vaccine according to claim 59, wherein said virus or micro-organism pathogenic to dogs is selected from the group of *Ehrlichia canis*, *Babesia gibsoni*, *vogeli*, *rossi*, *Leishmania donovani*-complex, Canine parvovirus, Canine distempervirus, *Leptospira interrogans* serovar *canicola*, *icterohaemorrhagiae*, *pomona*, *grippotyphosa*, *bratislava*, Canine hepatitisvirus, Canine parainfluenzavirus, rabies virus, *Hepatozoon canis* and *Borrelia burgdorferi*.

61. A vaccine for combating *Babesia canis* infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of Claims 53-56, or immunogenic fragment thereof.

62. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 52-55

63. A diagnostic test for the detection of *Babesia canis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 52-55.

## II. In the Claims (Marked Version)

Please cancel claims 1-22 without prejudice or disclaimer. Applicants are canceling claims 1-22 to present the identical claims in a proper form for U.S. examination

Please insert the following claims:

- - 23. A nucleic acid sequence encoding a 15 kD *Babesia canis* associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 24. The nucleic acid sequence of Claim 23 having at least 90% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 25. The nucleic acid sequence of Claim 23 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 26. A cDNA comprising a nucleic acid sequence according to Claim 23.
- 27. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

These claims are hereby incorporated by reference.

29. A live recombinant carrier comprising a cDNA comprising a nucleic acid sequence according to Claim 23.
30. A live recombinant carrier comprising a recombinant DNA molecule selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
31. A host cell comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23; a cDNA fragment comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
32. A *Babesia canis* associated protein, said protein having a molecular weight of 10-40 and comprising an amino

33. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 85% homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
34. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 90% homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
35. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 95% homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
36. A vaccine for combating *Babesia canis* infections, comprising an immunogen selected from the group consisting of a nucleic acid sequence according to Claim 13; a cDNA comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 23 and a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; and a cDNA comprising a nucleic acid sequence according to Claim 23.

nucleic acid sequence according to Claim 23, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

37. The vaccine of claim 36 further comprising an adjuvant.
38. The vaccine of claim 36 further comprising an additional antigen derived from a virus or microorganism pathogenic to dogs or a nucleic acid sequence encoding said antigen.
39. The vaccine according to claim 38, wherein said virus or micro-organism pathogenic to dogs is selected from the group of *Ehrlichia canis*, *Babesia gibsoni*, *vecelli*, *rossi*, *Leishmania donovani*-complex, Canine parvovirus, Canine distempervirus, *Leptospira interrogans* serovar *canicola*, *Icterohaemorrhagiae*, *pemona*, *grippotyphosa*, *bratislava*,

40. A vaccine for combating *Babesia canis* infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of claims 32-35, or immunogenic fragment thereof.
41. A diagnostic test for the detection of *Babesia canis* associated RNA wherein the test comprises a nucleic acid sequence according to Claim 23, a nucleotide sequence that is complementary to said nucleic acid sequence, and a fragment thereof having a length of at least 12 nucleotides.
42. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 32-35.
43. A diagnostic test for the detection of *Babesia canis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 32-35.
44. A nucleic acid sequence encoding a 32 kD *Babesia canis* associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:4.
45. The nucleic acid sequence of Claim 44 having at least 80% homology with the nucleic acid sequence depicted in SEQ ID NO:5.

46. The nucleic acid sequence of Claim 44 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:4.
47. A cDNA comprising a nucleic acid sequence according to Claim 44.
48. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
49. A recombinant DNA molecule comprising a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
50. A live recombinant carrier comprising a cDNA comprising a nucleic acid sequence according to Claim 44.
51. A live recombinant carrier comprising a recombinant DNA molecule selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
52. A host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44; a cDNA fragment comprising a nucleic acid sequence according to Claim 44; a recombinant DNA molecule comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

53. A *Babesia canis* associated protein, said protein having a molecular weight of 32 kD and comprising an amino acid sequence that is at least 80% homologous to the amino acid sequence as depicted in SEQ ID NO:4 or an immunogenic fragment of said protein.

54. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 85% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.

55. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 90% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.

56. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 95% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.

1. A recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

fragment comprising a nucleic acid sequence according to Claim 44; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid according to Claim 44, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 44 and a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter; and, a host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44, a cDNA fragment comprising a nucleic acid sequence according to Claim 44, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

59. The vaccine of claim 57 further comprising an additional antigen derived from a virus or microorganism pathogenic to dogs or a nucleic acid sequence encoding said antigen.
60. The vaccine according to claim 59, wherein said virus or micro-organism pathogenic to dogs is selected from the group of *Ehrlichia canis*, *Babesia gibsoni*, *vogeli*, *rossi*, *Leishmania donovani*-complex, Canine parvovirus, Canine distempervirus, *Leptospira interrogans* serovar *canicola*, *icterohaemorrhagiae*, *pomona*, *grippotyphosa*, *bratislava*, Canine hepatitisvirus, Canine parainfluenzavirus, rabies virus, *Hepatozoon canis* and *Borrelia burgdorferi*.
61. A vaccine for combating *Babesia canis* infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of Claims 53-56, or immunogenic fragment thereof.
62. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 52-55.
63. A diagnostic test for the detection of *Babesia canis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 52-55. - -

New claims 23-63 are original claims 1-22 re-written in a format proper for U.S. examination. The amendments made were not based on reasons related to patentability under 35 U.S.C. §§ USC 101, 102, 103 and/or 112. No estoppel should result from said amendments.